

What is claimed is:

1. An organic EL device comprising:

a substrate;

a bottom electrode formed on the substrate;

an organic EL layer formed on the bottom electrode, said organic EL layer comprising at least an organic light emissive layer;

a multilayer buffer structure formed on the organic EL layer and comprising two or more first type buffer layers containing a transparent material and two or more second type buffer layers containing a metal or an alloy, wherein each of the second type buffer layers are laminated on one of the first type buffer layers; and

a transparent top electrode through which light is emitted.

2. The organic EL device according to claim 1, wherein the buffer structure has a thickness less than or equal to 20 nm.

3. The organic EL device according to claim 1, wherein a ratio of a thickness of the first type buffer layer to a thickness of the second type buffer layer is in the range of 1:5 to 5:1.

4. The organic EL device according to claim 2, wherein a ratio of a thickness of the first type buffer layer to a thickness of the second type buffer layer is in the range of 1:5 to 5:1.

5. The organic EL device according to claim 1, wherein the second type buffer layer has a work function less than 4.8 eV.

6. The organic EL device according to claim 1, wherein the transparent material is selected from a group consisting of LiF, MgF₂, and Sb₂O₃.

7. The organic EL device according to claim 1, wherein the metal is selected from the group consisting of alkali metals, alkaline earth metals, rare earth elements, transition elements, and 3B group elements, and the alloy contains a metal selected from the group consisting of alkali metals, alkaline earth metals, rare earth elements, transition elements, and 3B group elements.

8. The organic EL device according to claim 1, wherein the metal and the alloy have electronegativity in the range of 0.2 to 2.0.

9. The organic EL device according to claim 1, wherein the metal is selected from Al, Ag, Mg, and Mn and the alloy contains one or more metals selected from Al, Ag, Mg, and Mn.

10. The organic EL device according to claim 1, wherein the multilayer buffer structure comprises five or more first type buffer layers containing a transparent material and five or more second type buffer layers containing a metal or an alloy.

11. A method for manufacturing an organic EL device comprising steps of:

- (a) forming a bottom electrode on a substrate;
- (b) forming an organic EL layer including at least an organic light emissive layer on the bottom electrode;
- (c) forming a buffer structure consisting of two or more first type buffer layers containing a transparent material and two or more second type buffer layers containing a metal or an alloy on the organic EL layer by alternately laminating the first type buffer layer and the second type buffer layer, and

(d) forming a transparent top electrode through which light is emitted, on the buffer structure by means of a sputtering method.

12. The method according to claim 11, wherein the buffer structure has a thickness less than or equal to 20 nm.

13. The method according to claim 11, wherein a ratio of a thickness of the first type buffer layer to a thickness of the second type buffer layer is in the range of 1:5 to 5:1.

14. The method according to claim 12, wherein a ratio of a thickness of the first type buffer layer to a thickness of the second type buffer layer is in the range of 1:5 to 5:1.

15. The method according to claim 11, wherein the second type buffer layer has a work function less than 4.8 eV.

16. The method according to claim 11, wherein the transparent material is selected from a group consisting of LiF, MgF₂, and Sb₂O₃.

17. The method according to claim 11, wherein the metal is selected from the group consisting of alkali metals, alkaline earth metals, rare earth elements, transition elements, and 3B group elements, and the alloy contains a metal selected from the group consisting of alkali metals, alkaline earth metals, rare earth elements, transition elements, and 3B group elements.

18. The method according to claim 11, wherein the metal and the alloy have electronegativity in the range of 0.2 to 2.0.

19. The method according to claim 11, wherein the metal is selected from the group consisting of Al, Ag, Mg, and Mn and the alloy contains one or more metals selected from Al, Ag, Mg, and Mn.